

Deakin University Library an Active Partner in the Implementation of the New Generation Platform, DESIRE2LEARN

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Anne Horn and Sue Owen, "Deakin University Library an Active Partner in the Implementation of the New Generation Platform, DESIRE2LEARN." *Proceedings of the IATUL Conferences*. Paper 17.
<http://docs.lib.purdue.edu/iatul/2011/papers/17>

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DEAKIN UNIVERSITY LIBRARY: AN ACTIVE PARTNER IN THE IMPLEMENTATION OF THE NEW GENERATION E-LEARNING PLATFORM, DESIRE2LEARN

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Abstract

Deakin University has a long association with e-learning platforms, utilising the functionality of various Learning Management Systems (LMS) over a period of years. Transforming learning and teaching is a key priority of the University and moving to a new generation e-learning platform that supports engaging learning experiences through quality course design is a strategic imperative.

In 2010 Deakin University selected Desire2Learn as its replacement LMS, an innovative platform that offers next generation functionality. The University is investing significant resources in 2011 to implement the new system. The Library is harnessing the opportunity to embed search and discovery and information access throughout the LMS, including presence at the highest level of navigation. A Library widget providing students with clear pathways and immediate access to key library collections, services and features is being developed by the Library in conjunction with the Faculties' academic champions and educational developers. Liaison Librarians are negotiating with academic staff to create context-specific pathways, to utilise Desire2Learn Web2.0 capabilities and to embed more personalised resources and LibGuides aligned with units of study. This is happening at a time when libraries are introducing new approaches to information discovery.

This paper describes Deakin University Library's journey in partnering with academic staff and others across the University to implement Desire2Learn as a vital new e-learning platform. It reports on many outcomes including: value created by embedding quality information in learner-centred course delivery; increased awareness of library subscription resources when accessible within students' workspace; strong and continuing relationships built with academic staff; enhanced Library staff engagement with flexible learning principles and new technologies. The question of where embedding information access in online courses and units fits with the Library's exploration of web scale solutions is also touched upon. And finally, an insight into how recent research undertaken by Deakin University Library has influenced our approach to information discovery solutions suggests an opportunity for many more questions to be explored.

Keywords: information discovery; Deakin University Library; e-learning platform; learning management system; Desire2Learn;

1. Introduction

As universities move to their next generation learning management systems (LMS), transforming the way people teach and learn, we can see a more mature and holistic approach to online learning environments. This transition brings particular opportunities in Australia where the changing higher education environment has firmly placed the spotlight on making education accessible to Australians wherever they live and work. [Bradley, 2008]

The introduction of new learning management systems coincides with libraries pursuit of improved information discovery solutions. These new discovery platforms, with a single search box and utilising massive consolidated indexes, have generated a high level of enthusiasm in the library marketplace. How do web scale discovery, the new e-learning platforms, and access to course related materials inter-relate? This paper presents Deakin University Library's conceptual approach and early experiences in both LMS and web scale discovery environments. The strategies we have adopted have been informed by years of usability studies and more recent research on students' information seeking behaviours.

Specialists in information literacy continue to seek best approaches in a blended learning environment and strategies that will have the most impact. The new LMS at Deakin provides new opportunities and a renewed recognition of our librarians' skills and expertise and a stronger role as partners in the cycle of course development, delivery and review.

There remain many challenges and many questions. Have librarians again fallen foul of trying to make it look simple when we daily face an increasingly complex information environment responding to the push and pull of different cohorts of searchers?

Our students come to university from many countries and cultures, and with varying family experiences of university life. Recognising how quickly student behaviours can change, our strategic responses need to be more evidence-based.

At Deakin University, we consider that the move to the new LMS provides an opportunity to reach all students and support them in their courses through providing quality learning experiences and support.

2. Making the most of new generation Learning Management Systems

In the transition to a new generation learning management system, there is a keen focus on the student experience in the contemporary online or blended learning environments. More tools are available to assist in developing and delivering quality courses and assessing student use. Mobile learning is featured as a rapidly growing component of e-learning.

Analytics can now assist in assessing our strategies to deliver educational outcomes to an increasingly diverse student population with different levels of preparedness, and from many cultures and experiences. The potential to embed student support and assistance within the LMS environment provides more enriching virtual learning and teaching environments.

The LMS has the capability to improve students' awareness and appreciation of the graduate attributes they have attained throughout the life of their course. LMS e-Portfolios can be used by students to document their career readiness enhancing their employability, and indicating a quality measure of their education success.

New LMS tools aid course design and align assessments and learning experiences with course objectives, assisting in the cycle of course development and review. Libraries, as partners with academics and educational developers, contribute expertise and knowledge of information sources and web scale information discovery that is invaluable in an online environment.

Most importantly for information literacy specialists the next generation LMS offers opportunity for students to enjoy clear and customised paths to information. Library staff have access to functionality to build robust conduits to quality relevant sources and search tools.

3. Deakin University's lead in flexible learning

From a global perspective, Deakin University is a relatively young university, taking its first students in 1977. Deakin has a rich heritage in distance education, off-campus and flexible delivery. The University is rapidly developing its profile as an innovative, progressive university committed to combining pedagogy and technology to produce high quality teaching and learning outcomes [Deakin University, 2011].

Flexible education at Deakin offers accessibility and choice, delivering educational opportunities to meet the needs of diverse student cohorts in a changing student environment. Deakin University was the first Australian University to introduce a Trimester system in 2008, with three teaching periods of equivalent duration and academic structure and a seamless mix of multiple modes of study, including face-to-face, online and mobile.

A key strategic imperative for the University is the implementation of a new, state-of-the-art learning management system to replace Blackboard. Deakin's new learning management system, Desire2Learn (D2L) will be introduced in a staged transition throughout 2011. The LMS integrates with a repository of digital learning objects (Equella) that allows sharing of resources through effective digital management and ensures compliance with Australian copyright legislation.

4. Deakin University Library: a partner in the implementation of Desire2Learn

The Library's initiatives in Desire2Learn have been strategic, collaborative and directed by our core responsibility: to maximise access to quality information.

Desire2Learn offers a range of functionality not previously available to library staff. The initial landing page is a selection of customised dynamic widgets accessing useful information to support students as they undertake their study. These widgets include lecturer contact details, a calendar of events, links to units, unit and faculty news, discussion boards, and a Library Resources area. In addition, Desire2Learn offers a range of operator roles providing more opportunities for access permissions tailored for different staff. Role definition makes it easier to include non-academic staff and to prescribe their activity.

Availability of functions in an application is one thing. Acceptance by the Faculty is also essential. Our task has been to build new partnerships with key stakeholders to ensure that library staff can maximise all opportunities to provide information access within students' own workspace [Dempsey, 2006]: to better integrate information access choices; to expose the wealth of increasingly complex collections and to embed information skills training, particularly in contexts where independent research skills are required.

Our strategy has been to initially involve a small number of staff in a range of Desire2Learn working groups and transition teams set up by the Faculties and the university. Through active in-person participation in these meetings we have immediately responded to issues raised by the transition teams, consolidated our awareness of the possibilities for library activity and communicated consistent and informed messages to all faculties. Meeting membership has been invaluable in establishing credentials and strengthening collaborative relationships. The journey has been a surprising adventure, moving through periods where the Library was seen to have limited value at the landing page level of Desire2Learn, through to periods of enthusiastic recognition by faculty teaching and learning staff of the value of targeted information access. In the process, Faculty have become more aware of new Library products and the expertise of library specialists.

Information access is being recognised as integral to course and unit design and delivery. The Library's role in assuring students' access to the information they need for successful progression and completion of their course is gaining renewed focus amongst the Faculties. The student's early take-up and high use of customised library widgets in the new LMS has positively demonstrated an unmet need for clear access to information resources.

At Deakin University our Library Services Model supporting teaching and learning is underpinned by three pillars of excellence:

- i) Personal student-centred support;
- ii) E-resource access and discovery;
- iii) Learning spaces supporting a vibrant learning environment.

The Library's implementation strategy for Desire2Learn embraces all three pillars to ensure holistic support for learning and teaching within the e-learning platform.

- i) Personal student-centred support = *Library link in top level navigation*

At the top level of Desire2Learn navigation there is a link 'Library' which takes them to the Library homepage (See Diagram 1 below).

Located at this top level the link is ubiquitous ensuring students always have access to:

- the full complement of personal student-centred services online (MyLibrary, information literacy training, information assistance incorporating interactive media);
- search and discovery tools (Quick Search, Discover More, classic catalogue, mobile catalogue) aligned with different cohort search preferences;
- opening hours and locations, contact details, library news and other information.

The screenshot shows the Desire2Learn interface for the course HSO102 - Foundations Of Occupational Science And Therapy A. The top navigation bar includes links for My Home, Locker, Blog, ePortfolio, email, Library (highlighted with an orange arrow and text 'Library - Top level navigation'), and Logout. Below the navigation bar, the course title is displayed. The main content area is divided into several sections: Updates (showing 48 unread discussion messages), Events (Today, All Day, Upcoming), Calendar (March 2011), News (News for End of Week 3), Content Browser (Unit Guide and Information, Unit Content, Fieldwork, Assessment), and Library Resources - OT (e-journals, Databases, Mobile view, Quick Search, Library Guide for Occupational Therapy, Databases for Occupational Therapy, Medline, CINAHL, Health Librarians, Library Help, Live Chat, Phone).

Diagram 1: Top level navigation includes link to Library homepage

- ii) Online collections – *Library widgets at the discipline and unit levels*

A Unit-based Library widget has been developed in the Desire2Learn Phase 1 implementation for each of the Faculties. The Flexible Education Librarian, in collaboration with the educational developers and unit chairs of each Faculty, has created the most appropriate widget content and layout for the Phase 1 trial units. Each widget comprises a variety of dynamic links, providing students with access to resources that relate to their specific unit of study. One link includes readings recommended by their lecturer. The unit widgets also link to relevant LibGuide subject guides showcasing the wealth of relevant online resources available in the

library's collections. In some widgets, direct links have been made to a key database or journal title considered critical to the unit's learning outcomes and assessment.

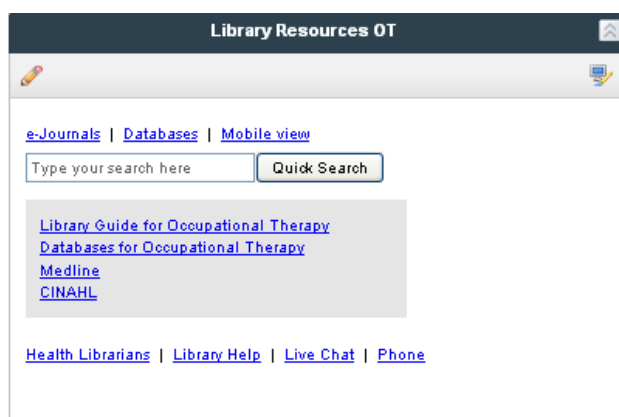


Diagram 2: Unit-based Library widget in Desire2Learn for Occupational Therapy

iii) Learning spaces providing a vibrant learning environment = *Content with Library links*

Information resources are also included in 'Unit Content' prepared by academic staff. Independent access to appropriate information is vital to many pedagogical processes such as problem-based curriculum, work-integrated curriculum or self-directed learning. When located within the lecturer's Unit Content, unit readings and do-it-yourself information discovery options are given a clear context, increasing meaning and value to students [Eisenberg 2007].

A multi-layered approach to information access is planned for the Library Service Model in the full rollout of Desire2Learn. The multi-layered approach includes:

- Top Level - Library Home Page;
- 2nd Level - A guide to information sources and discovery at the discipline level;
- 3rd Level - A Guide to information sources and discovery at the Unit Level
- 4th Level - Contextualised links embedded in Unit Content.

This will make up an Online Library Service Model supporting full information access.

5. How does Desire2Learn information access fit our overall approach to discovery?

Deakin University Library has been developing multiple pathways to information along a continuum of information access that accommodates the different needs and preferences of students throughout the life-cycle of their course. The different approaches taken by researchers seeking information reflects their preferences and expert subject knowledge.

The Library is accommodating these preferences in a spectrum of information delivery and discovery tools, as indicated in Diagram 3.

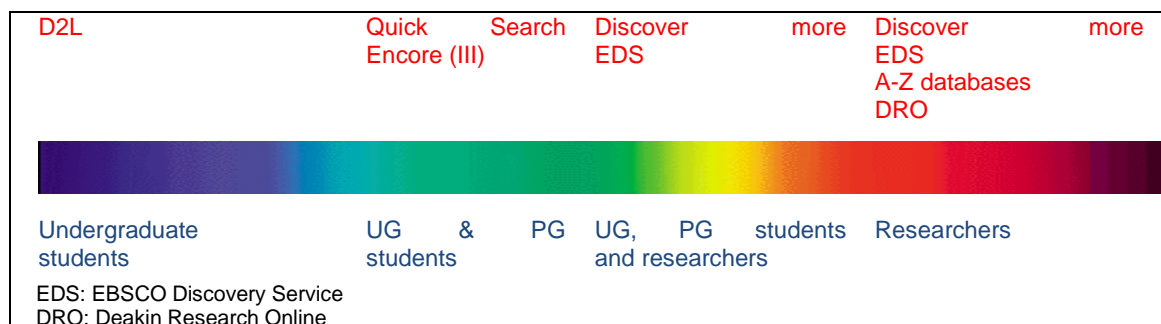


Diagram 3: Deakin University Library's Information Discovery Spectrum

Over the last five years, the key assumption driving website and information discovery products has been support for a single search box: "Let's keep it simple like Google." Would Google have such market dominance if it was all so simple? Increasingly our challenge as academic librarians has been to assure information access to everyone - from undergrad to top researcher - and make it look easy while keeping one step ahead of the information tsunami bearing down on us.

Deakin University Library was an early development site and adopter of Encore, Innovative Interface's web 2.0 catalogue using a federated search approach. Over the last three years the Library has gathered significant knowledge through its usability studies of access and discovery interfaces and what has worked for students and staff. [Clancy and Watson (2010)], [Owen and Clancy (2008)], [Horn & Owen (2009)]. This knowledge and insight led us to a key question:

Do students approach searching for information differently influenced by the purpose or need for the information?

To investigate, we instigated further research using a large sample of Deakin students. We sought evidence that the one search box approach would meet the needs of undergraduate students completing assignments, presentations and career activities.

We wanted to know what influenced students and whether their search for information for university study differed from their search for information in daily life. At a secondary level, we were interested in the technology they used for finding information. Communication preferences are of interest in informing our suite of services and our services model, and will be featured in a future paper.

6. How did research inform our strategic responses?

In 2008 Deakin University Library commissioned *Academic Surveys Australia, ACSPRI* to explore key questions we had identified regarding our website development and pathways to information. At the time, the Library recognised that much of the discussion around students' preferred ways of seeking information centred around overseas studies of students and was becoming dated. Deakin University Library had already gained a reputation for its website usability studies (ibid) and our iterative website development had been valuable. We began to question whether this approach alone would lead to the leap in information discovery approaches needed to keep us one step ahead of our students.

In 2009, the Library undertook a pilot survey to identify how students seek information and use library resources within the context of their university and everyday lives. The pilot survey provided useful insights and informed a more extensive survey conducted in 2010. A representative sample of 1,750 undergraduate students was randomly selected from the University's student database and, of these, 558 students participated.

The study used several tasks that students would undertake when studying and developing their career. Participants in the pilot study provided free text responses that were then coded to create response categories for the questions in the more extensive 2010 survey.

The key findings in Tables 1 and 2 below are of most relevance to students' potential use of 1) a learning management system and 2) the Library's website to access information for their unit requirements.

	Very unlikely	Unlikely	Neither	Likely	Very likely
The web using search engines	0.4	2.7	5.1	27.8	64.1
Library e-journals or e-books	4.0	6.8	9.3	31.9	48.0
The Library's databases	2.0	7.5	9.5	35.2	45.8
Government websites	1.3	3.3	11.5	47.7	36.3
Wikipedia	15.0	13.9	15.5	33.0	22.6
Newspapers	10.1	12.1	21.6	37.0	19.2
Books or DVDs from the Library	13.7	21.6	15.0	32.0	17.7
DSO	14.0	17.5	19.7	32.1	16.8
A lecturer or tutor	9.6	17.8	24.5	37.9	10.3
A classmate or colleague	10.9	20.2	27.3	33.9	7.7
Family or friends	13.3	29.0	26.4	26.6	4.7
A librarian	29.0	31.2	19.7	16.2	3.8

Table 1: Likelihood of using various sources of information for a presentation

	None	Hardly any	Some	Quite a lot	A great deal
Textbook and unit readings	0.9	1.5	11.0	33.5	53.2
Library e-journals or e-books	8.4	6.9	14.6	23.0	47.2
The web using search engines	4.2	9.1	25.0	25.7	36.1
DSO	8.8	9.7	23.5	27.2	30.8
Books or DVDs from the Library	13.5	19.2	21.9	21.6	23.8
Google Scholar	25.7	12.1	21.7	23.5	17.1
A lecturer or tutor	9.1	15.6	37.6	27.4	10.3
A classmate or colleague	14.3	24.7	38.1	18.3	4.5
Newspapers	26.4	29.8	29.1	12.2	2.6
Family or friends	30.0	34.6	27.3	6.6	1.6
A librarian	44.2	29.9	18.4	6.2	1.3

Table 2: Use made of various sources of information to write an essay or a paper

The findings of the survey showed:

1. When respondents were asked to recall an essay or paper they had to write recently, and the sources of information they had made use of for that purpose: Respondents reported considerable use of information sources specific to the task (course readings, electronic text), and more than half reported using general web searching 'quite a lot' or 'a great deal'.
2. When respondents were asked about the likelihood of using various information sources to find information to prepare a presentation: Participants' reports on information seeking for this purpose placed use of a general web search higher than use of electronic texts or library databases.

Comparing our results from an Australian students' sample with the results of a large survey distributed in the US in the spring of 2010 [Head and Eisenberg, 2010] there is a noticeable alignment of the outcomes.

For Head and Eisenberg, the highest ranking sources in the category of "use" were: Course Readings (96%); Search engines, including Google (92%); and Scholarly research databases (88%).

For the Deakin study, the most specific course-prescribed sources – textbook and unit readings; Library e-journals or e-books - received higher usage than did web searching. Web searching was the second choice in both studies.

Our thinking around how to best provide links to information in the new Deakin e-learning environment has been influenced by these results. There is benefit in offering direct access to prescribed sources together with a broader discovery approach embedding a Library Quick Search box. The question of how a discipline-based Library widget may differ from a unit-based Library widget and the relationship of such a widget to multiple courses of study continues to be explored with Faculty. Again, this discussion reflects the tension between discovery and known item searching, for which there is no one answer as yet.

7. Benefits noted in Desire2Learn Phase 1 implementation

Bower and Mee (2010) noted that the line between distance learners and campus learners is blurring. Now that *all* students have considerable time where they are 'online/off-campus' it is important for libraries to develop a full range of services to support them. In the rush to provide 'online information literacy' and 'web 2.0 assistance' options, many libraries have overlooked the need to improve student access to online collections to ensure that the process feels easy and delivers quality results. Our early experience with Desire2Learn unit-based Library widget development has highlighted significant benefits in making information more readily accessible through students' e-learning platform, noted in the following data.

One of the first trial units in 2011 is in the Accounting discipline. Usage of Deakin's LibGuide subject guide for Accounting increased by 54% on the first day the Desire2Learn teaching site went live – with 688 hits recorded. The library widget developed for the Arts discipline unit links to both the Education and the Visual Arts LibGuide subject guides. During the first 'live' week of the Desire2Learn e-learning platform, hits on the Visual Arts subject guide increased by 132%.

In the first month of activity, all four Unit-based Library widgets in Phase 1 implementation are delivering very significant increases in the use of the linked subject guides.

Subject Guide Discipline area	1 Jan-27 Feb 2011 hits (Pre Desire2Learn)	28 Feb-31 Mar 2011 hits (With Desire2Learn)	% Increase
Accounting	668	3391	407.63%
Visual Arts and Education	801	1751	118.60%
Environmental Management	321	934	190.97%
Occupational Therapy	181	358	97.79%

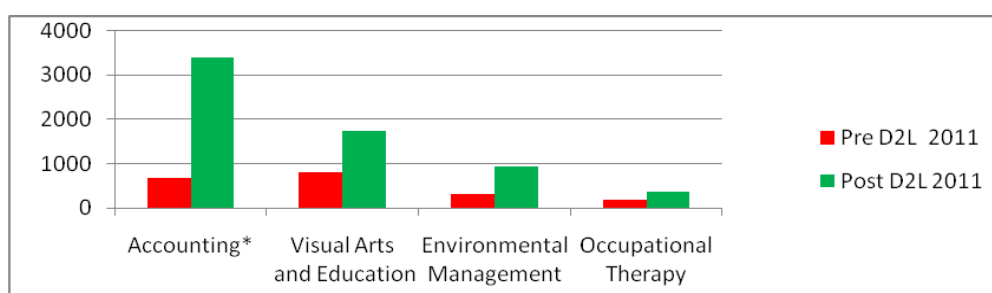


Diagram 4: Total Hits to any page in the widget-linked subject guides Jan-March 2011

Substantial increases in usage of the widget-linked subject guides in 2011 are evident in each discipline area, compared with usage in the same month in 2010 when Blackboard, the LMS in use, included lower-level library and information links:

Subject Guide Discipline area	March 2010 hits (Pre Desire2Learn)	March 2011 hits (With Desire2Learn)	% Increase
Accounting	626	3114	397.44%
Visual Arts and Education	772	1767	128.89%
Environmental Management	269	1112	313.38%
Occupational Therapy	276	358	29.71%

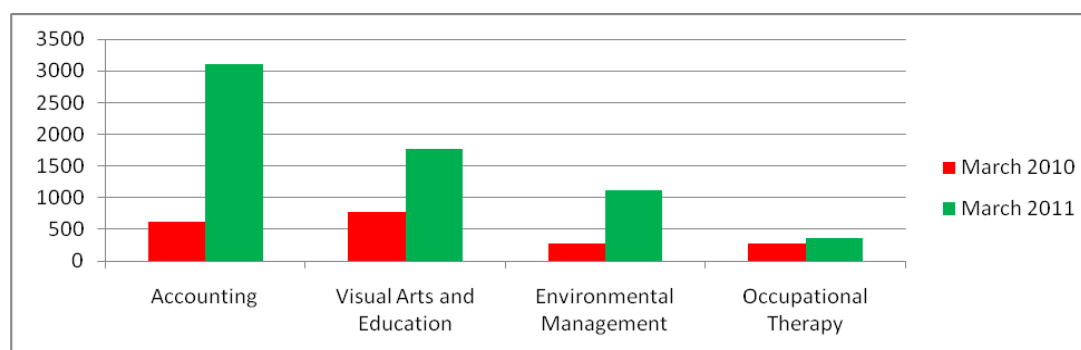


Diagram 5: Total hits to the widget-linked subject guides – March 2010 and March 2011

The value in clearer access to information via students' e-learning platform is reinforced in an unsolicited comment from a Lecturer in the Desire2Learn pilot Accounting Unit.

This is really positive and opens up new possibilities for lecturers as getting students into current journals has been one of our biggest struggles. Excellent possibilities...

8. Challenges noted in Desire2Learn Phase 1 implementation

The Library is in the early stages of identifying the array of Desire2Learn functionality and capability to best support quality information access. While it has taken significant time and resources, the Library has welcomed the opportunity for close collaboration with Faculty in achieving the diversity of Unit-based Library widget development. The process of creating widgets in the pilot units has provided an invaluable mechanism for continuous improvement and for identifying best practice for the full rollout of the Library Service Model in Desire2Learn.

Over 1500 units are taught at Deakin University. As it is neither feasible nor desirable to develop 1500 Unit widgets, Library and Faculty staff are working to reach a solution. Each Faculty is identifying key research-intensive units which the Library can support with customised Unit widgets. In addition key discipline areas are being identified to create discipline-based Library widgets to support students in all other units.

Our strategy is to determine the range of Unit and Discipline widget development that we can sustain effectively. One Faculty has requested widget templates with a range of link choices, from which they can select elements that best suit their students' and staff needs. Such input by Faculties is heartily welcomed and assists our Phase 2 preparation.

A current challenge is the integration of Equella, Deakin's learning object repository, with Desire2Learn. To date, the steps required to link an e-reading into a Desire2Learn unit are too numerous and exceedingly complex. The Library is working closely with Deakin's Desire2Learn technical team to ensure a suitable do-it-yourself e-readings process can be provided.

Library staff expertise in the new LMS is being developed to ensure the volume of work can be undertaken by a library team of flexible education support. Library resource is of course limited by the range of existing client services on offer. The Library Service Model includes a full range of well-regarded support services: Librarian-in-Residence; Higher Degree by Research support services; Low SES student strategies; frontline services and international student services. Library staff will be encouraged to collaborate in supporting best practice in Desire2Learn, to maximise our resource and service effectiveness. The strong accolades already received from staff and student and substantial increase in the use of library information resources makes activity in Desire2Learn a service that library staff themselves value.

9. Conclusion

As the full implementation of Desire2Learn progresses, the Library will continue to collaborate with academic teams to ensure that best practice is achieved in providing access to information, including research discovery options in students' LMS. With links and discovery tools embedded in students' e-learning platform increased usage of information resources was noted within days of the trial Library widgets being available. Furthermore, academic staff have benefitted from the widget development process, becoming more aware of new library collections and the extensive spectrum of discovery tools.

Desire2Learn is providing the Library with the opportunity to deliver its three pillars of service and support, online, as it does in the library's physical spaces. Further research into student information seeking preferences at Deakin University is informing library direction as it takes a more active and visible role in students' online workspace.

A key strategy for Deakin University from 2011 is a whole-of-university curriculum review. By establishing good foundations in Desire2Learn, the Library has set up significant potential for participation in graduate attribute and generic skills development. Its strong partnerships with experts across the university ensure the Library can deliver continuing improvements to information access in support of academic and research endeavour.

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